

TMDL Review Form

Document Name/Date:	Water Quality Restoration Plan and Total Maximum Daily Loads for the Sun River Planning Area (December 2004)
Submitted by:	Montana Department of Environmental Quality
Date Received:	January 3, 2005
Review Date:	February 22, 2005
Reviewer:	Bruce Zander (8EPR-EP)
Review of Draft or Final TMDL?	Final TMDL Formal Review

This document provides a standard format for the EPA Region VIII office to provide comments on the TMDL documents provided to the EPA for either official formal, or informal review. All TMDL documents are measured against the following 12 review criteria:

- | | |
|------------------------------------|---------------------------------------|
| 1. Water Quality Impairment Status | 7. Margin of Safety and Seasonality |
| 2. Water Quality Standards | 8. Monitoring Strategy |
| 3. Water Quality Targets | 9. Restoration Strategy |
| 4. Significant Sources | 10. Public Participation |
| 5. Total Maximum Daily Load | 11. Technical Analysis |
| 6. Allocation | 12. Endangered Species Act Compliance |

Each of the 12 review criteria is described below to provide the rationale for the review, followed by EPA's comments. This review is intended to ensure compliance with the Clean Water Act and also to ensure that the reviewed documents are technically sound and the conclusions are technically defensible.

This review of the Sun River Planning Area TMDLs covers the following waterbody/pollutant combinations:

Waterbody Name*	TMDL Parameter/Pollutant
Upper Sun River* MT41K001_010	thermal modification*, siltation*, suspended sediment*, nutrients*
Lower Sun River* MT41K001_020	thermal modification*, siltation*, suspended sediment*, TDS*, nutrients* (nitrogen), nutrients* (phosphorus)
Muddy Creek* MT41K002_010	thermal modification*, suspended sediment*, TDS*, nutrients* (nitrogen), nutrients* (phosphorus), pH*, selenium (not on list)
Ford Creek* MT41K002_020	siltation*, nutrients* (nitrogen)
Freezeout Lake* MT41K004_030	TDS*, sulfates*, (sulfates included in TDS), nitrogen*, organic enrichment/DO*, metals* (selenium)
Gibson Reservoir* MT41K004_020	siltation*, suspended sediment*
Willow Creek Res.* MT41K004_020	Non-pollutant impairment; no TMDL required

* An asterisk indicates the waterbody and pollutant were included on the State's §303(d) list of waterbodies in need of TMDLs.

1. Water Quality Impairment Status

Criterion Description – Water Quality Impairment Status

TMDL documents must include a description of the listed water quality impairments. While the 303(d) list identifies probable causes and sources of water quality impairments, the information contained in the 303(d) list is generally not sufficiently detailed to provide the reader with an adequate understanding of the impairments. TMDL documents should include a thorough description/summary of all available water quality data such that the water quality impairments are clearly defined and linked to the impaired beneficial uses and/or appropriate water quality standards.

- ☒ Satisfies Criterion
- ☐ Satisfies Criterion with stipulations provided below that must be addressed.
- ☐ Satisfies Criterion. Questions or comments provided below should be considered.
- ☐ Partially satisfies criterion. Questions or comments provided below need to be addressed.
- ☐ Criterion not satisfied. Questions or comments provided below need to be addressed.
- ☐ Not a required element in this case. Comments or questions provided for informational purposes.

The TMDL document provides information regarding the basis for the original §303(d) listing of all the waterbody/pollutant combinations including the water quality standards and uses that are impaired or threatened. For each of the combinations, a discussion is provided on the current water quality status. In addition to providing information on the current impairment status of each of the combinations, it also provides references that provide further detail on the data and information used for the assessment of the subject waters and pollutants.

In the event the most current assessment of a particular waterbody/pollutant combination shows that a TMDL is no longer needed for the pollutant (e.g., because water quality standards are now being met), the TMDL document provides the appropriate analysis and basis for such a conclusion.

2. Water Quality Standards

Criterion Description – Water Quality Standards

The TMDL document must include a description of all applicable water quality standards for all affected jurisdictions. TMDLs result in maintaining and attaining water quality standards. Water quality standards are the basis from which TMDL's are established and the TMDL targets are derived, including the numeric, narrative, use classification, and antidegradation components of the standards.

- ☒ Satisfies Criterion
- ☐ Satisfies Criterion with stipulations provided below that must be addressed.
- ☐ Satisfies Criterion. Questions or comments provided below should be considered.
- ☐ Partially satisfies criterion. Questions or comments provided below need to be addressed.
- ☐ Criterion not satisfied. Questions or comments provided below need to be addressed.
- ☐ Not a required element in this case. Comments or questions provided for informational purposes.

For each of the waterbody/pollutant combinations, the document provides a description of the applicable water quality standards that are to be used as a basis for making assessment determinations as well as setting targets for the TMDLs designed to implement the TMDL.

3. Water Quality Targets

Criterion Description – Water Quality Targets

Quantified targets or endpoints must be provided to address each listed pollutant/water body combination. Target values must represent achievement of applicable water quality standards and support of associated beneficial uses. For pollutants with numeric water quality standards, the numeric criteria are generally used as the TMDL target. For pollutants with narrative standards, the narrative standard must be translated into a measurable value. At a minimum, one target is required for each pollutant/water body combination. It is generally desirable, however, to include several targets that represent achievement of the standard and support of beneficial uses (e.g., for a sediment impairment issue it may be appropriate to include targets representing water column sediment such as TSS, embeddeness, stream morphology, up-slope conditions, and a measure of biota).

- ☒ Satisfies Criterion
- ☐ Satisfies Criterion with stipulations provided below that must be addressed.
- ☐ Satisfies Criterion. Questions or comments provided below should be considered.
- ☐ Partially satisfies criterion. Questions or comments provided below need to be addressed.
- ☐ Criterion not satisfied. Questions or comments provided below need to be addressed.
- ☐ Not a required element in this case. Comments or questions provided for informational purposes.

For each waterbody/pollutant combination, a target is provided which is based on state numeric water quality standards or an interpretation of the narrative provisions found in state standards.

4. Significant Sources

Criterion Description – Significant Sources

TMDLs must consider all significant sources of the stressor of concern. All sources or causes of the stressor must be identified or accounted for in some manner. The detail provided in the source assessment step drives the rigor of the allocation step. In other words, it is only possible to specifically allocate quantifiable loads or load reductions to each significant source when the relative load contribution from each source has been estimated. Ideally, therefore, the pollutant load from each significant source should be quantified. This can be accomplished using site-specific monitoring data, modeling, or application of other assessment techniques. If insufficient time or resources are available to accomplish this step, a phased/adaptive management approach can be employed so long as the approach is clearly defined in the document.

- ☒ Satisfies Criterion
- ☐ Satisfies Criterion with stipulations provided below that must be addressed.
- ☐ Satisfies Criterion. Questions or comments provided below should be considered.
- ☐ Partially satisfies criterion. Questions or comments provided below need to be addressed.
- ☐ Criterion not satisfied. Questions or comments provided below need to be addressed.
- ☐ Not a required element in this case. Comments or questions provided for informational purposes.

For each of the waterbody/pollutant combinations, the document identified significant sources. Where possible, loads were quantified by source type or by sub-watershed. In addition, where possible, a distinction was made between natural and anthropogenic-caused loadings. Much of the information on sources was based on either monitoring data or modeling results.

5. TMDL

Criterion Description – Total Maximum Daily Load

TMDLs include a quantified pollutant reduction target. According to EPA reg (see 40 C.F.R. 130.2(i)) TMDLs can be expressed as mass per unit of time, toxicity, % load reduction, or other measure. TMDLs must address, either singly or in combination, each listed pollutant/water body combination.

- ☒ Satisfies Criterion
- ☐ Satisfies Criterion with stipulations provided below that must be addressed.
- ☐ Satisfies Criterion. Questions or comments provided below should be considered.
- ☐ Partially satisfies criterion. Questions or comments provided below need to be addressed.
- ☐ Criterion not satisfied. Questions or comments provided below need to be addressed.
- ☐ Not a required element in this case. Comments or questions provided for informational purposes.

For each waterbody/pollutant combination that required a TMDL, a TMDL was established with the exception of Gibson Reservoir. Gibson Reservoir will remain on the 303(d) list since further study is needed to determine true impairment status and appropriate targets. TMDLs were expressed either as a mass/time using an appropriate averaging period (e.g., annual, weekly, daily) or were expressed as a function of flow. All TMDLs were designed to achieve the corresponding water quality targets and attain applicable water quality standards.

6. Allocation

Criterion Description – Allocation

TMDLs apportion responsibility for taking actions or allocate the available assimilative capacity among the various point, nonpoint, and natural pollutant sources. Allocations may be expressed in a variety of ways such as by individual discharger, by tributary watershed, by source or land use category, by land parcel, or other appropriate scale or dividing of responsibility. A performance based allocation approach, where a detailed strategy is articulated for the application of BMPs, may also be appropriate for non point sources.

In cases where there is substantial uncertainty regarding the linkage between the proposed allocations and achievement of water quality standards, it may be necessary to employ a phased or adaptive management approach (e.g., establish a monitoring plan to determine if the proposed allocations are, in fact, leading to the desired water quality improvements).

Allocating load reductions to specific sources is generally the most contentious and politically sensitive component of the TMDL process. It is also the step in the process where management direction is provided to actually achieve the desired load reductions. In many ways, it is a prioritization of restoration activities that need to occur to restore water quality. For these reasons, every effort should be made to be as detailed as possible and also, to base all conclusions on the best available scientific principles.

- ☒ Satisfies Criterion
- ☐ Satisfies Criterion with stipulations provided below that must be addressed.
- ☐ Satisfies Criterion. Questions or comments provided below should be considered.
- ☐ Partially satisfies criterion. Questions or comments provided below need to be addressed.
- ☐ Criterion not satisfied. Questions or comments provided below need to be addressed.
- ☐ Not a required element in this case. Comments or questions provided for informational purposes.

For each waterbody/pollutant combination, the document provided both wasteload allocations and load allocations, although the wasteload allocation was "0" when there were no permitted point sources contributing the pollutant of concern. In some cases, the allocations were expressed in terms of mass per time or % reduction from current loadings. In yet other cases, the allocation was based on EPA's "performance based" allocation scheme where best management practices (BMPs) were identified for nonpoint sources such that the controls were adequate to attain any applicable water quality standard.

7. Margin of Safety and Seasonality

Criterion Description – Margin of Safety/Seasonality

A margin of safety (MOS) is a required component of the TMDL that accounts for the uncertainty about the relationship between the pollutant loads and the quality of the receiving water body (303(d)(1)(c)). The MOS can be implicitly expressed by incorporating a margin of safety into conservative assumptions used to develop the TMDL. In other cases, the MOS can be built in as a separate component of the TMDL (in this case, quantitatively, a $TMDL = WLA + LA + MOS$). In all cases, specific documentation describing the rationale for the MOS is required.

Seasonal considerations, such as critical flow periods (high flow, low flow), also need to be considered when establishing TMDLs, targets, and allocations.

- ☒ Satisfies Criterion
- ☐ Satisfies Criterion. Questions or comments provided below should be considered.
- ☐ Partially satisfies criterion. Questions or comments provided below need to be addressed.
- ☐ Criterion not satisfied. Questions or comments provided below need to be addressed.
- ☐ Not a required element in this case. Comments or questions provided for informational purposes.

Margin of Safety For most of the waterbody/pollutant combinations, the TMDL assigned an explicit margin of safety as a percentage of the TMDL. Where there was uncertainty regarding pollutant controls and the resultant water quality, post-implementation monitoring was suggested in some instances which included adaptive management to ensure attainment of water quality standards. Finally, some of the TMDLs addressed uncertainty by relying on conservative assumptions related to the water quality target, the source assessment, and/or the conservative nature of the performance measures.

Seasonality For each waterbody/pollutant combinations, seasonality was taken into consideration in some manner. For example, TMDLs were designed to take into consideration seasonal patterns in pollutant loadings, the dynamic nature of acceptable pollutant loadings based on flow, or the need to apply certain pollutant control practices during certain times of the year.

8. Monitoring Strategy

Criterion Description – Monitoring Strategy

Many TMDL's are likely to have significant uncertainty associated with selection of appropriate numeric targets and estimates of source loadings and assimilative capacity. In these cases, a phased TMDL approach may be necessary. For Phased TMDLs, it is EPA's expectation that a monitoring plan will be included as a component of the TMDL documents to articulate the means by which the TMDL will be evaluated in the field, and to provide supplemental data in the future to address any uncertainties that may exist when the document is prepared.

- ☒ Satisfies Criterion
- ☐ Satisfies Criterion with stipulations provided below that must be addressed.
- ☐ Satisfies Criterion. Questions or comments provided below should be considered.
- ☐ Partially satisfies criterion. Questions or comments provided below need to be addressed.
- ☐ Criterion not satisfied. Questions or comments provided below need to be addressed.
- ☐ Not a required element in this case. Comments or questions provided for informational purposes.

For each waterbody/pollutant combination, the TMDL document provided a monitoring plan. Some of the plans were conceptual in nature whereas others were fairly detailed by prescribing what type of monitoring should be performed, what parameters should be monitored, and how frequently monitoring should be performed. The purpose of the monitoring is to ensure water quality standards are being attained and to drive adaptive management decisions resulting in adjustments to water quality control practices.

9. Restoration Strategy

Criterion Description – Restoration Strategy

At a minimum, sufficient information should be provided in the TMDL document to demonstrate that if the TMDL were implemented, water quality standards would be attained or maintained. Adding additional detail regarding the proposed approach for the restoration of water quality is not currently a regulatory requirement, but is considered a value added component of a TMDL document.

- ☐ Satisfies Criterion
- ☐ Satisfies Criterion. Questions or comments provided below should be considered.
- ☐ Partially satisfies criterion. Questions or comments provided below need to be addressed.
- ☐ Criterion not satisfied. Questions or comments provided below need to be addressed.
- ☒ Not a required element in this case. Comments or questions provided for informational purposes.

A restoration strategy was provided for each waterbody/pollutant combination where a TMDL was developed. The restoration strategies provided information regarding the sources in need of control, the type of water quality measures to be put in place, and the locations within the watershed that are most in need of restoration.

10. Public Participation

Criterion Description – Public Participation

The fundamental requirement for public participation is that all stakeholders have an opportunity to be part of the process. Public participation should fit the needs of the particular TMDL.

- ☒ Satisfies Criterion
- ☐ Satisfies Criterion with stipulations provided below that must be addressed.
- ☐ Satisfies Criterion. Questions or comments provided below should be considered.
- ☐ Partially satisfies criterion. Questions or comments provided below need to be addressed.
- ☐ Criterion not satisfied. Questions or comments provided below need to be addressed.
- ☐ Not a required element in this case. Comments or questions provided for informational purposes.

Montana DEQ facilitated involvement from a range of stakeholders through the period of TMDL development. In particular, DEQ collaborated with the Sun River Watershed Group throughout the process. A technical review committee made up of stakeholders had an opportunity to review and comment on the draft TMDLs. Further, the general public were given an opportunity to review and comment on the Sun River TMDLs during a 30-day public comment period as well as in a public meeting held in Great Falls. The Sun River document provided a summary of comments received as well as a responsiveness summary from MT DEQ.

11. Technical Analysis

Criterion Description – Technical Analysis

TMDLs must be supported by an appropriate level of technical analysis. It applies to all of the components of a TMDL document. It is vitally important that the technical basis for all conclusions be articulated in a manner that is easily understandable and readily apparent to the reader. Of particular importance, the cause and effect relationship between the pollutant and impairment and between the selected targets, sources, TMDLs, and allocations needs to be supported by an appropriate level of technical analysis.

- ☒ Satisfies Criterion
- ☐ Satisfies Criterion. Questions or comments provided below should be considered.
- ☐ Partially satisfies criterion. Questions or comments provided below need to be addressed.
- ☐ Criterion not satisfied. Questions or comments provided below need to be addressed.
- ☐ Not a required element in this case. Comments or questions provided for informational purposes.

The level of technical analysis surrounding water quality impairment status, the targets, TMDLs, and allocations are adequate. The conclusions are sufficiently supported by the available data, supplemental studies, and supporting literature. In large part, cause and effect relationships were demonstrated through empirical data analysis and simplified loading methods. In some cases, water quality models (e.g., SPARROW for nutrients, SSTEMP for temperature) were used to perform analyses on the extent and needed level of pollutant loading.

12. Endangered Species Act Compliance

Criterion Description – Endangered Species Act Compliance

EPA's approval of a TMDL may constitute an action subject to the provisions of Section 7 of the Endangered Species Act ("ESA"). EPA will consult, as appropriate, with the US Fish and Wildlife Service (USFWS) to determine if there is an effect on listed endangered and threatened species pertaining to EPA's approval of the TMDL. The responsibility to consult with the USFWS lies with EPA and is not a requirement under the Clean Water Act for approving TMDLs. States are encouraged, however, to participate with FWS and EPA in the consultation process and, most importantly, to document in its TMDLs the potential effects (adverse or beneficial) the TMDL may have on listed as well as candidate and proposed species under the ESA.

- ☐ Satisfies Criterion
- ☐ Satisfies Criterion with stipulations provided below that must be addressed.
- ☐ Satisfies Criterion. Questions or comments provided below should be considered.
- ☐ Partially satisfies criterion. Questions or comments provided below need to be addressed.
- ☐ Criterion not satisfied. Questions or comments provided below need to be addressed.
- ☒ Not a required element in this case. Comments or questions provided for informational purposes.

The EPA will consult with the US Fish and Wildlife Service under the provisions of Section 7(a)(2) of the ESA regarding its approval of these TMDLs. For now, the approval is contingent based on the outcome of such consultation.

